

**Testimony of Leslie L. Vadasz  
Executive Vice President, Intel Corporation  
President, Intel Capital**

**Hearing on “Protecting Content in the Digital Age – Promoting Broadband and the  
Digital Television Transition”**

---

I appreciate the opportunity to appear before the Committee to discuss the information technology (IT) industry’s work on creating a more secure environment for the dissemination of digital content. Intel – and the rest of our industry – has as great, if not a greater, interest as the studios in the growth of a robust market for new digital content offerings to the consumer. And, we have an equally strong interest in the protection of intellectual property.

But we come at these challenges from very different perspectives. The IT industry is all about innovation; we embrace and champion technological progress. The content community, by contrast, has historically feared technology – from the advent of sound recording, to the development of the VCR, the DVD, the PC and other digital devices. Yet every advancement in technology has proven to be a major growth catalyst for the studios. Videocassette rental and sales totaled about 11 billion dollars last year, exceeding box office receipts by some 2+ billion dollars. This is the device once referred to by Jack Valenti as the “Boston Strangler” of the film industry. Other “attackers” of the film industry include the DVD, which added another 5.9 billion to studio receipts in the last year.<sup>1</sup> It is important to keep these facts in perspective when reviewing claims of imminent threats to the health of the film industry.

Nevertheless, we agree that content protection is important and we are working together on that challenge. But at the outset, I want to emphasize the following points:

- **Any attempt to inject a regulatory process into the design of our products will irreparably damage the high-tech industry: it will substantially retard innovation, investment in new technologies, and will reduce the usefulness of our products to consumers.**
- **Consumer rights to enjoy powerful technology products, with the robustness they have come to expect, and their right to fully enjoy content in accordance with what the law permits, would both be greatly diminished if the studios’ “wish list” of content protection objectives were fully implemented.** PC’s would become a “dumb device” when it comes to copyrighted content, and consumers would lose important fair use rights now protected in the law.

**IT Industries: the power behind our economy**

The information technology sector is enormously important to the overall health of the US economy. The Department of Commerce just released a new report entitled *Digital Economy 2002*. According to this report, in 2000, the IT-producing industries employed some 5.6 million

---

<sup>1</sup> Scott Hettrick, “2001: Higher Ground, Tight at the Top,” *Video Business*, 21 January 21 2002, 32.

workers, with average wages per worker more than twice the national average. During the period from 1996-2000, IT “was responsible for 28 percent of overall real economic growth”. Most importantly, the study states that the evidence “suggests that massive IT investments by U.S. industries are producing positive and enduring changes in the nation’s economic potential.”<sup>2</sup>

Information from the Bureau of Economic Analysis provides useful insight into the relative positions – and importance to the economy – of the IT industry and the studios. According to *Digital Economy 2002*, business, personal, and government spending on IT goods and services (not including communications services) totaled \$600 billion in 2000. Meanwhile, the gross domestic product of the motion picture industry was approximately \$35 billion in 2000.<sup>3</sup>

Innovations in our industry have come at a staggering pace. Consumers have come to expect from us a continuous flow of ever more powerful devices, at lower cost, each year. These innovations require large amounts of investment and tremendous amounts of research and development. Last year, Intel spent \$3.8 billion on R&D alone, about half of all that Hollywood earned in box office receipts in the past year.<sup>4</sup>

**This dynamic of innovation would be choked by any attempt to regulate the design of products solely for the benefit of one industry. Designing products through a regulatory process, as some studios have advocated, would inject political influences into technology development in very destructive ways. Investment and innovation will both suffer, as a fear of entanglement with government processes will have a chilling effect on investors and subject new ideas to “reg review”.**

### **Overview of content protection: the work that has been done by the IT industry**

The primary challenge in content protection, we have found, comes down not to technology but answering the question: how is the consumer best served?

The first time the issue of digital video content protection arose was in 1995, when Digital Versatile Discs – DVD’s – were preparing to come on the market. Concerned about mass copying of DVD’s, Hollywood attempted to persuade Congress to legislatively mandate technological “fixes” to address the prospect of widespread consumer copying of DVD discs. Not surprisingly, the studios opted for an overreaching approach that would have all but eliminated the value of the PC experience.

Responding to the threat of legislation freezing in place inadequate, clumsy solutions to copy protection issues, Intel and the PC industry mobilized the consumer electronics industry and the studios to form a working group known as the Copy Protection Technical Working Group

---

<sup>2</sup> United States, Department of Commerce, Economics and Statistics Administration, *Digital Economy 2002* (Washington: February 2002, accessed 25 February 2002); available from <http://www.esa.doc.gov/508/esa/DIGITALECONOMY2002.htm>.

<sup>3</sup> United States, Department of Commerce, Bureau of Economic Analysis, *Gross Domestic Product by Industry in Current Dollars, 1994-2000*, (Washington: undated, accessed 25 February 2002); available from <http://www.bea.doc.gov/bea/dn2/gpoc.htm>

<sup>4</sup> Box Office receipts totaled \$8.35 billion in 2001. See Sharon Waxman, “Hollywood’s Great Escapism: 2001 Box Office Receipts Set a Record” *The Washington Post* 4 January 2002, p A01.

(CPTWG). This body reviewed and enhanced cryptographic tools that could be applied to DVD content – which still today protect DVD's from being hacked by all but a tiny percentage of users of these products. Through the work of CPTWG (subgroups 4C and 5C), we have also tackled the issues of content distribution between devices and the protection of information in recordable media.

**While this consensual process yielded specifications that sped DVD to market, I have serious concerns that consumers were not fully served.**

### **The over-the-air broadcast protection question**

One immediate concern of the studios, today, is over-the-air broadcast of digital content. The CPTWG is nearing completion of technical specifications to address this issue. There is general agreement that it may be necessary for the FCC to assist in the implementation of the digital broadcast protection solution by enacting a very narrow regulation respecting requirements for digital television receiver products to ensure that they pass on the content in a protected form. However, I have great concerns that we are, again, rushing this technology to market without pausing to ensure that customers' reasonable expectations for use of the products are weighed in the balance.

### **The “analog hole” issue**

Another issue, much more complex and difficult to solve, is the so-called “analog hole”. This is the situation presented by millions of legacy devices – such as the commonly owned VCR of today --- that have digital inputs and analog outputs. Such devices can be used to reconvert a digital signal to analog, from which it can then be reconverted to digital through available PC equipment or other devices.

Work toward solving this issue has started – “watermarking” solutions have been proposed and are being evaluated -- but there is no clear path to a solution at the present time. Again, we are working on this issue aggressively, but some studio demands – we believe – would infringe on consumer fair use rights.

It has been suggested by the studios that the placement on chips of electronic circuitry that would recognize and respond to watermarks be mandated by regulation. For the government to mandate how the IT industry designs and develops chips – or to try and force agreement for design features – would be ludicrous. As I said before, irreparable economic damage would result.

### **Our view of the studio perspective**

For some studios, the objective is total control. In the early 70's, when RCA was experimenting with the new technology of videotape, researchers were eager to find a means to control consumers' use of the product in order to maximize studio revenues. The means eventually chosen was simple: a video would play once, and when finished, the cassette would lock into place. The customer would have to return the video to the store, and pay again, to have it unlocked. In spite of the restrictive nature of this technology, the Disney executives were horrified

---

<sup>5</sup> Lawrence Lessig, “May The Source Be With You,” *Wired* (December 2001, accessed 25 February 2002);

because they could not control how many people could watch the videotape.<sup>5</sup>

In 1981, Mr. Valenti bemoaned the prospect that the industry would be overwhelmed by “millions of little tapeworms” eating at the very heart and essence of copyright(s).<sup>6</sup> Today there are 88 million VCR’s in use in the US alone, yet the studios are making more money than ever before. Since the VCR has been introduced, the number of new films released per year has more than doubled, while annual sales of videotapes have grown from approximately 3 million units to over 700 million units.<sup>7</sup> Four and a half million VHS tapes of *Shrek* were sold in just two days. As I noted before, consumers spent \$11 billion on the rental and purchase of VHS tapes in 2001.<sup>8</sup>

Substitute “digital” for “tape” in Mr. Valenti’s comments in 1981 and the arguments are the same. Congress should not engage in futile attempts to design products by regulation. **Instead, Congress should focus attention on the degree to which the consumer interest is being undermined by a slavish adherence to demands for “total” content protection.**

### **Where is the voice of the consumer?**

There is a fundamental difference between the perspectives of the high-tech industry and the content community. High-tech does not have one narrow market objective – that of maximizing revenue from content distribution. We have a broader marketplace composed of hundreds of millions of consumers who want ubiquitous, powerful digital tools that can manage a wide variety of information, content, and applications *and who want to use them for all lawful purposes.*

Consumers expect, when they buy a PC, that it will have the power, versatility, and robustness that they know our industry can provide. They also have expectations to be able to make full use of the PC’s ability to store, retrieve, create, and manage digital content. We intend to provide that utility, while providing technologies to protect against wholesale copyright infringement.

I have stated that I have concerns whether all of the compromises that have been reached to date are in the best interests of the consumer. We have rejected some of the more onerous controls that have been advanced by the content community, such as:

- **“Forensics” tracking** – which would identify parties from whom unauthorized copies of content products were obtained – with very substantial impacts on consumer privacy;
- **“Selectable output”** controls that would allow the content owner to arbitrarily meddle with the consumer’s electronics;
- **Playback controls**, which could require devices to inspect all digital content and prevent playback of any content which is not approved by Hollywood.

---

available from <http://www.wired.com/wired/archive/9.12/lessig.html>.

<sup>6</sup> Ellen Goodman, “The Right To Zap,” *Washington Post*, 24 January 1984, p A13.

<sup>7</sup> MPAA Research Department, *2000 US Economic Review* (accessed 25 February 2002): available from <http://www.mpaa.org/useconomicreview/2000Economic/index.htm>.

<sup>8</sup> Hettrick, 32.

### **Voluntary, consensual standards – the best means to the right balance**

In the end, the only way to effectively balance the interests of content owners, manufacturers of consumer electronics devices, and the information technology industry with the rights of consumers is through the voluntary, consensus-based process. It can be difficult, does not lend itself to “one size fits all” solutions, and may be viewed as cumbersome by some who would rather see the process driven by top-down control mechanisms. But it is the only path which will allow technology to advance efficiently while reconciling all of these competing interests.

There are new “intelligent” consumer products, exemplified by the PC, that are dramatically improving the consumer experience. The real question for the content community is not whether we will provide effective content protection tools, but rather whether they are prepared to enter the digital age. They must finally accept that consumers want affordable, usable digital products and they must develop new business models that give consumers what they want – without obsessing about controlling all of the consumers’ choices. The video rental market has contributed very substantially to studio profits – but that market developed over their early objections to the idea of allowing consumers to view a film as many times as desired without paying for each viewing. The same will be true of digital products, once the studios move forward and take advantage of the content protection tools that we are now offering.

I would like to leave this Committee with the following thoughts:

- **First**, listen to the consumer – he is paying the bill for all of our products. Consumers want flexibility and power in digital products and robust applications.
- **Second**, do not tinker with the IT industry by trying to regulate the development of our technologies. Irreparable damage will result – the pace of innovation, productivity growth, and our industry’s contribution to economic growth will all decline.
- **Third**, do not buy into a view of content protection that will deprive consumers of the ability to get the full benefit of the capabilities of the PC by neutering it – when it comes to content management – to be nothing more than a more expensive version of a “dumb” DVD player.

Thank you for your time. I would be happy to answer any questions.